Nutritional Status and Physical Fitness of Full Day Elementary School Students

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Abstract

Nutritional status can be measured through the adequacy of nutrients obtained from food which are digested every day. The increasing number of healthy food absorbed by the body can increase the physical fitness of the body. The purpose of this research was to do counseling in order to understand the nutritional status and physical fitness level of fifth grade student at Tunas Harapan Islamic Elementary School in Sendang-mulyo, Tembalang, Semarang. The physical fitness level was measured using nutritional status and physical fitness test (TKJI). The data were obtained using descriptive method with measurement and test techniques. These data were obtained from measurement of height, weight, age, and physical fitness tests (TKJI). This study found that the nutritional status of fifth grade students in Tunas Harapan Islamic Elementary School were included in normal nutrition category and moderate physical fitness level.

Introduction

Nasrulloh (2014) stated that physical education is an inseparable part of education in general. The implementation of this subject is delivered through physical exercise and lectures regarding physical education, sport, and health (*penjasorkes*). The subject of nutrition is also important to be delivered by the teacher in order to make the students understand the importance of nutrition for their body. The appropriate training program could increase physical fitness.

Annas (2011) stated that national development needs sufficient number of human resources for its implementation. The government gave high priority for community nutrition improvement and disease prevention in order to increase the quality of human resources and their life. Nutritional status is one important aspect in improving the quality of human resources.

Kusunawati (2017) stated that improvement of community nutrition was needed for entire cycle of life, starting from pregnancy, infancy, preschool age, elementary school age, adolescence, adulthood, and geriatric age. Rahmadini (2013) stated that there were several malnutrition could inflict poor outcomes, either short term or long term. Malnutrition could cause morbidity, disability, mortality, stunting, intellectual decline, and increase in risk of diseases.

The important aspect in increasing the quality of human resources is the effort to improve community nutritional status, because nutrition is the factor which determine the

quality of life. Rahim (2014) explained that nutrition was one of the aspect which affect community health. Merita (2017) stated that communicable disease and food availability were strongly related with family nutrition. Kusunawati (2017) stated that food availability was not the only cause of malnutrition.

Setyawati (2015) stated that nutritional status was used to determine the balance of nutrition. Nutritional status was affected by nature, social, and other indirect factors. Ferida (2012) explained that nutritional status was the situation of the body, which was the result of nutritional substance consumption, absorption, and utilization. Nutrition and physical fitness play important role in supporting the development of better human resources. Furthermore, better human resources will support the development of many aspects of human life.

The increase of morbidity and mortality from malnutrition was related with numerous infectious diseases (Handayani, 2014). Budiono (2013) stated that low nutritional intake and infectious disease were the direct cause of malnutrition, while food availability, parenting, sanitation, clean water source, and health care were indirect cause of malnutrition. Nutritional problem can be solved in short period of time. The choice of food material is important. It can be used to determine the nutritional status and physical fitness. Therefore, periodic test and measurement of both nutritional status and physical fitness are necessary.

Irianto (2005) in Soegiyanto (2014) stated that people were categorized to have good physical fitness if they capable of performing daily activities efficiently without excessive fatigue and could enjoy their spare time. Meanwhile, people were categorized as healthy people if they were free from any diseases. In conclusion, health and fitness were needed by people to enjoy their life.

Physical fitness is categorized into two categories, namely health related fitness and skill related fitness. The components of physical fitness which are related to health are cardiac and pulmonary endurance, physical endurance in general, muscle strength, flexibility, and body position. The components of physical fitness which are related to skill are speed, dexterity,

balance, speed of reaction, coordination, and body composition.

The optimal physical fitness can only be obtained through correct, regular, and measurable physical training, both in term of its dose and its intensity. Tunas Harapan Islamic Elementary School is a full day school. The students are performing high intensity physical activity on a daily basis. Therefore, they need adequate nutritional intake and good physical fitness. There were many students who experience fatigue during studying process in the class and performing sport subjects in the field. Good physical fitness for students can increase the ability and willingness to study. Therefore, student achievement in their study can be increased.

In this study, the subjects were the fifth grade students of Tunas Harapan Islamic Elementary School. They were chosen because they were still on the developmental age and underwent rapid developmental stage. The students were having different physical activities. On elementary school age, the students tend to actively perform their daily activities. Nutritional status and physical fitness of these fifth grade students were never been studied before. Based on these facts, we conclude that our study entitled "Nutritional Status and Physical Fitness of Full Day Elementary School Students" was necessary.

Method

This study was a quantitative study with descriptive method. The data were obtained to gain information about phenomenon, condition, or certain variable, which was not performed for hypothesis testing (Maksum, 2009). This study aimed to describe the data of nutritional status and physical fitness of the fifth grade student in Tunas Harapan Islamic Elementary School in Sendangmulyo, Tembalang, Semarang.

The population of this study was the fifth grade students of Tunas Harapan Islamic Elementary School in Sendangmulyo, Tembalang, Semarang. They were divided into 4 subclasses with total of 120 students. The sample were obtained through random sampling technique without stratification of the population. Practically, all students randomly draw a lottery and the chosen 30 students were

included as the subjects.

The fifth grade students were chosen because they were the oldest among other available students. The sixth grade students were not able to participate in this study because the school committee obliged them to focus on national examination preparation.

We used several tests for data collection. Before performing the main study, we performed a preliminary study to observe the condition in the school. The steps of this preliminary study were as follows: 1) Determination of the target of the study which were the fifth grade students of Tunas Harapan Islamic Elementary School in Sendangmulyo, Tembalang, Semarang, 2) Information provision to the targets regarding the activities in the study.

The next step was the preparation of the instrument of the study, namely height measurement device, stationary, and an examination room. The first measurement was measurement of nutritional status by measuring body height, body weight, age in year, and age in month. Physical fitness examination was performed next using Indonesian Physical Fitness Test (TKJI). The implementation was as follows: 1) The students were lined up according to their student number, 2) Anthropometric test was performed to obtain body height, body weight, and age data of the students, 3) The obtained data were entered to BMI/age test, 4) Z score was determined and adjusted with the median table of Permenkes Book 2010, 5) TKJI was performed last.

The test which were used as variables in this study were body height measurement and TKJI.

Results and Discussion

In this section, the data from the test and measurement of each variables are presented. The variables were body height, body weight, age, and Z score of BMI for determination of nutritional status. Sprint, pull-up, sit-up, vertical jump, medium distance running tests were the variables for determination of physical fitness, which were included in TKJI.

Analysis of the data was performed initially by entering the data into calculation table and categorizing each variable according to the criteria and reference values. Average, standard of deviation, and percentage of each

criteria were determined after. Description of the data from the calculation of each variable will be explained below.

Table 1. General Characteristics of the Subjects

Sex	Average of Age
Male : 16	
Female : 14	10 year and 6 month
Total : 30	

Source: Primary Data

Table 2. Classification of Nutritional Status Average

Nutrition Status	Students	Average Value	Median	%
Normal	26	-0.55	-0.66	86.67%
Obesity	4	3.93	3.62	13.33%
Total				100%

Source: Primary Data

Based on the data, majority of students were having normal nutritional status. The number of students with normal nutritional status were 26 (86.67%), while the other 4 students (13.33%) were obese.

Table 3. Classification of Physical Fitness Average

No	Physical Fitness	Students	Percentage (%)
1.	Very Good	3	10%
2.	Good	6	20%
3.	Moderate	17	56.67%
4.	Poor	4	13.33%
Total			100%

Source: Primary Data

Table 3 showed that the majority of physical fitness criteria of the students was moderate category (56.67%), followed by good category (20%), poor category (13.33%), and very good category (10%).

Based on the data, majority of students were having normal nutrition. There were 26 students with normal nutritional status and 4 students which were obese. These 26 students with normal nutritional status were assumed to have adequate and regular nutritional intake. It was proven by their behavior to fulfill their nutritional needs. They were not fulfilling their
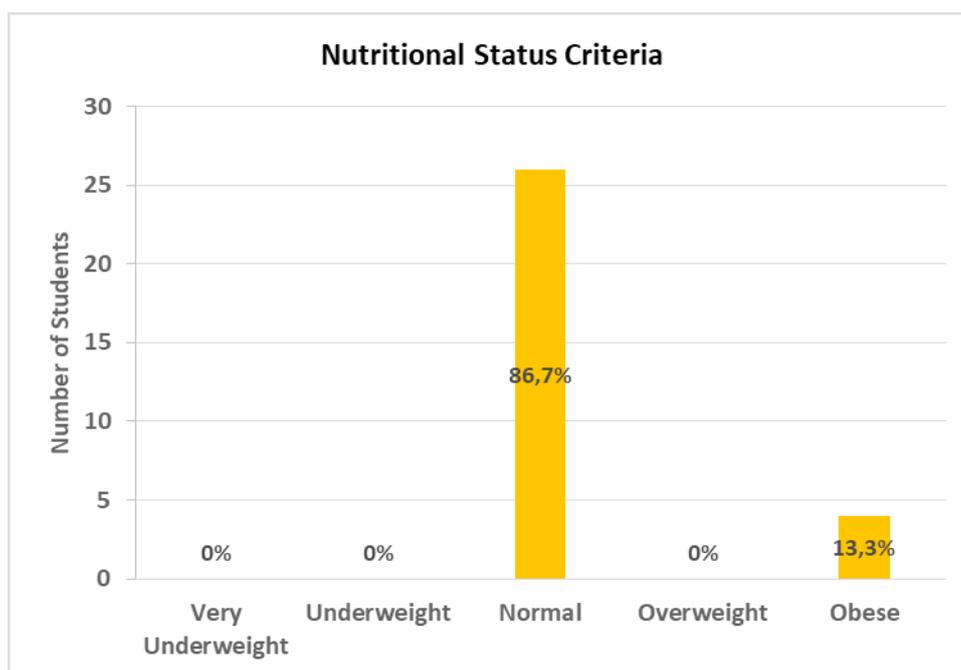
Figure 1. Percentage of Nutritional Status Criteria of the Fifth Grade Students in Tunas Harapan Islamic Elementary School

needs by excessive eating. Environmental factor also played an important role. The district of the study was the rice and fish producers. Most of the student's parents were farmers and employees. Therefore, the student's nutritional needs could be fulfilled by adequate protein and carbohydrate in their food.

There were several factors which affect the results of physical fitness exam in this study. The factors were as follows: the duration of sport subject was increased from 2 hour into 4 hour in a week, the number of sport teacher was sufficient, extracurricular activities were obligatory for the students, the sport teacher taught their students several traditional sport games which eventually increased the physical fitness of the student, and the students had huge interest towards physical fitness test which made them eager to perform physical activity.

Therefore, the majority of fifth grade students of Tunas Harapan Islamic Elementary School were included in moderate physical fitness criteria. Based from this data, the intensity of physical activities program and its monitoring must be increased in order to increase student's physical fitness. Normal

nutritional status of the students was associated with balanced and healthy dietary habit. Numerous case of malnutrition could be prevented by provision of healthy food by the parents. Nutritionally balanced food is food material which has several components, namely carbohydrate, protein, fat, and other substances in balanced quantity which were proportionate to the body requirement.

Moderate result of TKJI test was correlated to the student's habit to perform their physical activity, both inside or outside the classroom, on a daily basis. The amount of physical activity was strongly correlated to every aspects of physical fitness. The increase of duration of sport subjects outside the classroom from 2 hours to 4 hours also affected the result of this study. The habit to perform routine physical exercise was one of the ways to increase physical fitness.

Relevant result was also found by Kushendar (2010) which revealed positive and significant relationship between physical fitness and student's learning achievement. In addition to physical fitness, intelligence also gave significant impact to the student's learning
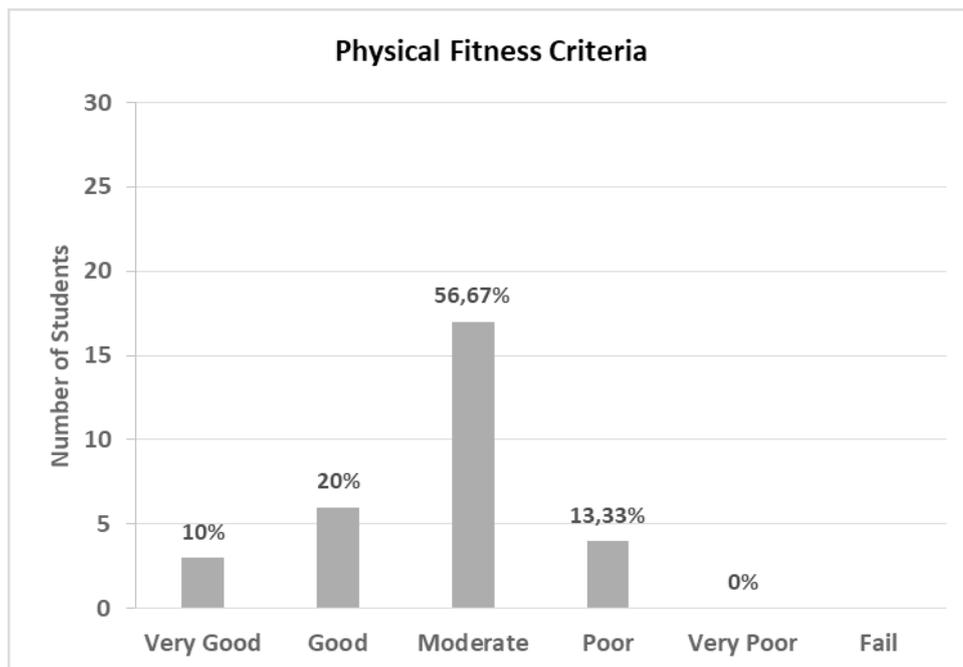
Figure 2. Percentage of Physical Fitness Criteria of the Fifth Grade Student of Tunas Harapan Islamic Elementary School

achievement. Nutritional status is correlated to physical fitness. The study about nutritional status which was performed by Handayani (2014) found that in terms of body height and body weight, majority of the students (36.64%) were underweight. Several other studies also found that nutritional status affect physical fitness. There are other factors which affect physical fitness such as physical activity and training. However, nutritional status is the fundamental factor of physical fitness of children.

Conclusions

In conclusion, the majority of fifth grade students in Tunas Harapan Islamic Elementary School Semarang had normal nutritional status. There were 26 students (86.7%) with normal nutritional status and 4 students (13.33%) with obesity. Furthermore, there were 3 students (10%) with very good physical fitness, 6 students (20%) with good physical fitness, 17 students (56.7%) with moderate physical fitness, and 4 students (13.33%) with poor physical fitness.

Based on these findings, we recommend the subjects to maintain their nutritional status and physical fitness. Therefore, they can achieve better study results.

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